California Department of Transportation
Division of Engineering Services
Materials Engineering and Testing Services
5900 Folsom Blvd.
Sacramento, CA 95819-4612

Prequalified Products List
Corrosion Protection Systems for Mechanical Butt Splices, Butt Welds and Lap Welds on Epoxy Coated Reinforcement

This document lists corrosion protection systems that have been tested and are approved by the Materials Engineering and Testing Services, Corrosion Technology Branch for use as corrosion protection coverings for mechanical butt splices, butt welds and lap welds on epoxy coated reinforcement. These systems are approved for use when applied in accordance with the manufacturer's recommendations, supplemental requirements of this document, and other applicable requirements of the Department's specifications. When there is a conflict between the manufacturer's recommendations and the requirements of the Department, the Department requirements shall govern.

Other systems will be considered for inclusion on this list subject to evaluation by the Corrosion Technology Branch.

For inquiries about this list, contact Rob Reis at (916) 227-7287 or rob_reis@dot.ca.gov.

Prequalified Systems

PRODUCT/COMPANY	Web Site Link
SpliceSeal, Patent No. 6,265,065 RJD Industries, Inc. 26945 Cabot Rd., Suite # 105 Laguna Hills, CA 92653-7009 Phone: (800) 344-4753 Fax: (949) 582-0995	http://www.rjdindustries.com/
Corrosion Protection Wrap, Patent No 7,175,893 **State of California,** **Department of Transportation** **Corrosion Technology Branch** **5900 Folsom Blvd.,** **Sacramento, CA 95819**	Patent information obtainable at: http://patft.uspto.gov/netahtml/PTO/search-adv.htm Keywords: Coats AND Reis AND corrosion

Supplemental Requirements

1) Corrosion protection systems on this list are for corrosion protection of mechanical and weld splices of epoxy-coated reinforcement, and **shall not** be allowed for use as a general repair strategy for damaged epoxy coating.

2) Corrosion protection systems for splices on epoxy-coated reinforcement consisting of a heat shrinkable tube must be installed as a continuous tube. Cutting a tube lengthwise and wrapping it around the splice region is not permitted.

3) All sharp edges and burrs that may damage the corrosion protection system shall be removed from the coupler and/or rebar prior to applying the shrink tubing. Grinding of welds and/or couplers shall be done in accordance with the Department's acceptable practices and/or manufacturer's procedures (for mechanical splices).

4) Corrosion protection systems that include the use of heat-shrinkable products require a pre-heat of the coupler that will be in contact with the shrink product. The target range for the preheat temperature is between 100 °C (212 °F) and 115°C (240°F). Heat may be applied directly to the installed coupler, however, it shall not be applied directly to the epoxy-coated reinforcement, since the heat source may damage the coating. Indirect heat (heat transferred from the coupler to the epoxy-coated reinforcement) is acceptable and will enhance the bond of the shrink product. However, in no case shall the indirect heat raise the temperature of the coated bar above 115°C (240°F) or burn the epoxy coating. All oil, dirt, grease, solvents, or other deleterious material shall be removed from the mechanical splice immediately prior to pre-heating. The contractor shall monitor the preheat temperature with a heat sensor gun. The corrosion protection system shall be applied before the pre-heated coupler has cooled below the minimum pre-heat temperature.

5) Corrosion protection systems shall extend a minimum of 50 mm (2 in) onto the epoxy-coated region of the bar after final installation.

6) Heat shrinkable tubing with cuts, tears, pinholes, or other defects, as determined by the Engineer, shall be rejected.

7) For the Corrosion Protection Wrap System, the outer layer of the covering should be made of a heat-shrinkable material, including but not limited to flexible, irradiated, and cross-linked, low density polyethylene or stretchable and heat shrinkable polyolefin or polyamide. The outer layer will typically be 20 mils thick. The outer layer should be sufficiently durable so that it can withstand casting in concrete. The inner layer should be

made of a material that flows or liquefies when heated, including but not limited to heat sensitive semi-crystalline polymer mastic.

8) For the Corrosion Protection Wrap System, prior to applying the tape wrap, the tape may be cut to a length that is sufficient to cover the splice region and provide the required overlap lengths. Cutting the tape wrap to the specified length facilitates wrapping so that the applicator does not need to hold an entire roll of tape wrap.

9) For the Corrosion Protection Wrap System, after the correct temperature is achieved, application of the tape wrap should begin on the fusion-bonded reinforcing steel element, approximately two tape widths beyond the end of the weld splice or mechanical coupler splice. The start of the wrap includes one full width overlap of tape plus one-half width overlap to "lock" the wrapping material to the reinforcing steel. Successive wraps are made at a slight angle to the initial wrap and with a one-half width overlap to cover the entire splice region. The tape wrap should be pulled tight and under tension to avoid loose wraps around the splice. Pulling tight on the tape should slightly stretch the material. Wrapping should be continuous. If the wrapping material breaks prior to completing the wrap, it should be removed. Successive wraps should be added until the material extends one and one-half wrap widths beyond the opposite end of the splice. The wrap is terminated with one full-width wrap overlap to "lock" the wrap in place prior to the application of heat shrinking.

10) For the Corrosion Protection Wrap System, after wrapping, heat is applied uniformly to the outside wrapped surface, to all sides, continuously to initiate shrinkage of the wrapping onto the splice region. Shrinkage of wrapping is complete when the inner mastic lining flows out slightly from between all overlap locations and including the initiation and termination ends of the wrap (Figure 8). Temperature used to heat the tape wrap should be between the range of 77°C and 87°C (170°F and 190° F). Wrapping must be allowed to cool to ambient temperature before coming into contact with other objects.